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The Effect of Back Massage on Reducing Back Pain in Third-Trimester Pregnant Women at Adow Community Health Center

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Abstract, *Background: Discomfort in third-trimester pregnant women often arises due to physiological changes, with back pain being the most common complaint (occurring in 70% to 90% of cases). If left untreated, this pain can interfere with daily activities, cause insomnia, and even affect the childbirth process. Objective: This study aimed to determine the effect of back massage on reducing the intensity of back pain in third-trimester pregnant women at Adow Community Health Center. Methods: The research design used a Pre-Experimental approach with a One Group Pretest-Posttest design. The sample consisted of 40 third-trimester pregnant women respondents experiencing back pain, selected at Adow Community Health Center. Data were analyzed using the Paired t-Test statistical test. Results: Before receiving back massage, the majority of respondents (57.5%) experienced moderate-scale pain. After the intervention, the majority of respondents (70%) reported a reduction in pain to a mild scale. The statistical test results showed a p-value of 0.000 (p < 0.05) with an average pain reduction of 1.125. Conclusion: Back massage has a significant effect on reducing the intensity of back pain in third-trimester pregnant women at Adow Community Health Center.*

Keywords: *Back Massage, Back Pain, Pre-Experimental, Pregnant Women, Third Trimester.*

1. INTRODUCTION

According to the International Federation of Gynecology and Obstetrics (FIGO), pregnancy is defined as the fertilization or union of spermatozoa and ovum followed by nidation or implantation. Calculated from fertilization until the birth of the baby, a normal pregnancy lasts 40 weeks or 10 lunar months, or 9 months according to the international calendar. Pregnancy is divided into 3 trimesters, where the first trimester lasts 12 weeks, the second trimester 15 weeks (weeks 8 to 27), and the third trimester 13 weeks (weeks 28 to 40) (2). Pregnancy is a joyful event for every married couple but is sometimes accompanied by complaints during pregnancy (Kartikasari & Nuryanti, 2016).

Discomfort during pregnancy arises from physiological and psychological adaptive changes. Third-trimester (TM III) discomfort, i.e., at 28-42 weeks of gestation, commonly includes back pain (70%), frequent urination (50%), constipation (40%), leg cramps (10%), and shortness of breath (60%). Back pain is one of the most common discomforts experienced by third-trimester pregnant women. Several studies on pregnancy-related back pain report prevalence rates of 25% to 90%; it is estimated that 50% of pregnant women will experience back pain. Approximately 80% of pregnant women state that back pain during

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pregnancy interferes with their daily routine, and 10% of them report being unable to work (Dewiani et al., 2022).

According to the World Health Organization (WHO), up to 70% of pregnant women in Australia and up to 50% in the United Kingdom and Scandinavian countries reportedly experience back discomfort. Most researchers indicate that 50 out of 100 pregnant women will experience lower back pain discomfort; previous epidemiological studies on low back pain discomfort during pregnancy range from 25/100 to 90/100. 80/100 primiparous pregnant women experience lower back pain discomfort. This has been shown to impact the daily lives of pregnant women; 10/100 reported being unable to perform activities properly, and 20% of pregnant women complain of back pain. In the Netherlands, a study on back pain revealed that 38% of women still experience symptoms (Effect et al., 2023).

Research results on pregnant women in various regions of Indonesia show that 60-80% experience back pain during their pregnancy. Several studies on pregnancy-related back pain range from 25% to 90%; most studies estimate that 50% of pregnant women will suffer from back pain. One-third of them will suffer from severe pain, which will reduce their quality of life. 80% of pregnant women suffering from back pain during pregnancy say it affects their daily routine, and 10% of them report being unable to work.

Back pain is one of the most common discomforts experienced by third-trimester pregnant women during pregnancy. Back discomfort is caused by changes in the center of gravity due to the enlarging uterus, leading to stretching and weakening of abdominal muscles, changes in body posture, and pressure on the back. Back pain in the third trimester of pregnancy, if not addressed promptly, can become prolonged. In the third trimester, increasing gestational age brings structural changes to the mother's body, including the spine. One change that occurs is the formation of lordosis, a natural curvature in the lower spine. This lordosis can increase pressure on spinal muscles and joints as the pregnant woman's body posture changes to accommodate the growing fetus. This tension can result in discomfort in the pregnant woman's back, often felt as back pain. As gestational age increases, this tension tends to rise and worsen the back discomfort in pregnant women (S et al., 2024).

Another complication caused by lower back pain is impaired mobility, which can hinder the mother's daily activities such as walking, driving, childcare, causing insomnia, fatigue, and irritability. This lower back pain is also musculoskeletal, meaning it can be associated with pelvic disorders such as infection, which may affect the smoothness of the later childbirth process (Et & Kunci, 2021)

Efforts to reduce pain can use pharmacological and non-pharmacological methods. Pharmacological therapy by administering analgesic drugs to pregnant women is recommended by doctors, and non- pharmacological therapy can be performed by healthcare workers or the patient's family, one of which is Back Massage, which can reduce back pain in pregnant women by relieving muscle tension and pain, increasing mobility, and improving blood circulation. If this back pain is not resolved, it can lead to prolonged back pain and an increased tendency for back pain after delivery (Mutiara et al., 2022).

2. RESEARCH METHODS

The research design used was Pre-Experimental with a *One Group Pretest-Posttest* design. The sample used in this study consisted of 40 respondents. The sample included third-trimester pregnant women experiencing back pain at Adow Community Health Center. The obtained data were then analyzed using the *Paired t-Test* statistical test to determine the effect of back massage on reducing back pain in third-trimester pregnant women.

3. RESEARCH RESULTS

Table 1 Age Distribution of Third-Trimester Pregnant Women Receiving Back Massage.

Age	f	%
22 yrs - 25 yrs	6	15.0
26 yrs - 30 yrs	21	52.5
31 yrs - 35 yrs	12	30.0
>35 th	1	2.5
Total	**40**	**100.0**

The table above shows that the majority of respondents were aged 26-30 years, totaling 21 respondents (52.5%).

Table 2 Educational Background Distribution of Pregnant Women Receiving Back Massage.

Education	f	%
Junior High School	2	5.0
Senior High School	26	65.0
Higher Education	12	30.0
Total	**40**	**100.0**

The table above shows that the majority of respondents had a Senior High School/Vocational High School education, totaling 26 respondents (65.0%).

Table 3 Distribution of Back Pain Level in Pregnant Women Before Back Massage.

Pain Scale	f	%
Moderate	23	57.5
Severe	17	42.5
Total	**40**	**100.0**

Based on the table above, the number of pregnant women experiencing back pain before receiving back massage was 23 (57.5%) with a moderate pain scale.

Table 4 Distribution of Back Pain Level in Pregnant Women After Back Massage.

Pain Scale	f	%
Mild	28	70.0
Moderate	12	30.0
Total	**40**	**100.0**

Based on the table above, the number of pregnant women experiencing back pain after receiving back massage was 28 (70.0%) with a mild pain scale.

Table 5 The Effect of Back Massage on the Intensity of Back Pain in Third-Trimester Pregnant Women at Adow Community Health Center.

Variable	N	Mean	Std. Deviation	Sig.(2-tailed)
Pre Test – Post Test	40	1.12500	0.33493	0,000

The table above shows that the mean pain reduction is 1.12500. Furthermore, based on the *Paired t-Test*, the *p-value* is 0.000 ($p<0.05$), indicating that Back Massage has an effect on reducing back pain in third- trimester pregnant women at Adow Community Health Center

DISCUSSION

The research results show that the pain scale before back massage was moderate for 23 respondents (57.5%) and severe for 17 respondents (42.5%), with a mean of 2.4250. Meanwhile, the pain scale after back massage was mild for 28 respondents (70.0%) and moderate for 12 respondents (30.0%), with a mean of 1.3000. The results of the *Paired t-*

Test obtained *p =* 0.000 ($p<0.05$), indicating that Back Massage has an effect on reducing back pain in third-trimester pregnant women at Adow Community Health Center.

During pregnancy, a pregnant woman will undergo various psychological and physiological changes. The fetal size at less than 6 months of gestation is usually not too large and therefore does not burden the mother's activities. Changes in the musculoskeletal system cause pregnant women to feel pain in the lower back region (Mutiara et al., 2022).

The occurrence of back pain experienced by third-trimester pregnant women is caused by increased gestational age in the third trimester and fetal development, which increases the load within the uterus, leading to back pain. In addition, it is influenced by excessive bending and strenuous or heavy physical activity such as household chores, which can cause fatigue and lack of rest. These conditions cause pregnant women to feel discomfort and experience back pain of varying intensity. Various efforts made to address back pain include sleeping in a side-lying position, alternating between left and right sides, performing stretching exercises to train waist elasticity, and applying massage (Fauziah & Sugiatini, 2024).

Based on the above facts, it is known that many factors influence back pain, including age, which significantly determines the mother's health status. A pregnant woman is considered high-risk if she is under 20 years old or over 35 years old. Differences in development will affect the response to pain. This development includes physical and organ readiness; at ages less than 20 years, the body is not yet ready for reproductive tasks and is not psychologically mature. Young age or under 20 years makes pain control difficult. Reproductive age over 35 years is associated with a decline in physical condition and organ function, especially the reproductive system (Endorphin et al., 2022).

Differences in perceived pain scale are subjective to each respondent due to varying pain thresholds. Additionally, each individual's experience and ability to control pain also determine pain acceptance. Only the laboring mother best understands the pain she feels. Furthermore, there are physiological factors that can influence each individual's perception and reaction to pain (Ikhlasiah et al., 2022).

The impact of lower back pain on pregnant women is that they will experience sleep disturbances leading to fatigue and irritability, as well as discomfort in performing activities. Managing lower back pain during pregnancy is crucial as it can improve physiological and psychological conditions. Pain management can be achieved through pharmacological and non-pharmacological methods. One way to address lower back pain in pregnant women is by performing body movement exercises during pregnancy, such as back massage.

Back massage is a solution for low back pain in pregnant women. The massage movements for pregnant women involve stroking and pressing in a way that does not stimulate contractions, thereby reducing pain, inducing relaxation, improving circulation, and is one method that affects sleep pattern disturbances in primigravid pregnant women through the help of loving touch massage therapy during pregnancy to promote physical and mental health. (Dewiani et al., 2022). Massage applied to the back of pregnant women can help reduce back pain and stimulate endorphin release, thereby enhancing relaxation. Systematically, a relaxed pregnant woman will improve her physical health. (Suarniti et al., 2019). Treatment for lower back pain during pregnancy is divided into two types: pharmacological therapy and non-pharmacological therapy. One effective non-pharmacological approach is back massage, performed to reduce pain intensity, stimulate relaxation, and improve blood circulation. Prenatal Massage uses hand pressure on soft tissues, tendons, or ligaments without changing joint position. However, it is important for midwives to understand the contraindications of Prenatal Massage to ensure it is administered safely and effectively (Rismayanti, 2022)

According to the researcher's perspective, back massage performed on third-trimester pregnant women can reduce the level of back pain. The analysis results above indicate that back massage is highly effective in reducing back pain in third-trimester pregnant women. This is because back massage has a non-pharmacological effect to reduce pain during and approaching childbirth without endangering the mother or fetus. If performed regularly (2-3 times) per week during pregnancy, it can improve sleep quality, stimulate endorphin release, and lower adrenaline levels, thereby increasing feelings of relaxation and calmness.

4. CONCLUSION

Based on the research results and discussion, several conclusions can be drawn as follows:

1. Intervention Effectiveness: Back massage was proven significantly effective in reducing the intensity of back pain in third-trimester pregnant women at Adow Community Health Center.
2. Change in Pain Scale: A noticeable reduction in pain level occurred, where before the intervention the majority of respondents were in the moderate (57.5%) and severe (42.5%) pain categories, shifting to mild (70%) and moderate (30%) categories after the intervention.

3. Pain Reduction Mechanism: Back massage works non-pharmacologically by reducing muscle tension, improving blood circulation, and stimulating the release of endorphins, which enhances relaxation and provides a sense of calm for pregnant women.
4. Statistical Significance: The results of the Paired t-Test obtained a value of p = 0.000, indicating that the research hypothesis is accepted; namely, there is a significant effect of administering back massage on pain reduction.

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